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DIVISION OF  
OIL, GAS & MINING

October 27, 1989

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MINERALS PROGRAM  
FILE COPY

Mr. Grant A. Pinkerton  
North Lily Mining Company  
P.O. Box 421  
Eureka, Utah 84628

Re: North Lily Mining  
Tintic project  
Construction Permit

Dear Mr. Pinkerton:

We have reviewed the revised plans and specifications for the expansion of the heap leach pad at the Tintic leach facility.

The project basically appears to comply with current design requirements and practices for heap leach facilities. A construction permit is hereby issued as constituted by this letter, subject to the following conditions.

- a. The 1 inch diameter leak detection pipe will be installed in a 1 inch deep groove cut into the leak detection base.
- b. The leak detection base material will have a permeability of  $1.0 \times 10^{-6}$  centimeters per second or less.
- c. The quality assurance standards for the leak detection base, leak detection media, secondary clay liner, primary liner (geomembrane) and process solution collection system for the first pad also apply to this heap leach pad extension.
- d. An approvable contingency plan, and operation and maintenance plan will be submitted to the Bureau of Water Pollution Control (The Bureau) within 30 days after the issuance of this permit.
- e. Inspections must be scheduled with the Bureau not less than three (3) days prior to commencing construction of the following:
  1. leak detection system
  2. secondary clay liner
  3. field seaming of the geomembrane

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- f. The Bureau must be notified at least seven (7) days prior to completion of construction of these facilities so a final inspection can be arranged.
- g. Neutralization criteria for these facilities shall meet the standard specified in our construction permit dated 13 April 1988 for the original heap leach facility.
- h. Quality assurance documentation for the heap leach pad as described in C above must be submitted to the Bureau within Sixty (60) days of the completion of construction of the pad.
- i. All process piping will be routed inside the lined areas of the leach pad.

The extension to the heap leach pad consists of an area 600 feet wide and 300 feet long onto the south side of the existing pad. The liner system will consist of the following beginning at the top.

- a. Primary solution collection system will consist of the ore with 3 inch perforated pipe spaced fifteen (15) feet on center.
- b. Liner protection material consisting of three (3) feet of spent ore from the existing pad with a permeability of  $1 \times 10^{-6}$  centimeter per second or less.
- c. Primary liner consisting of 30 mil PVC beneath the heap and 40 mil OR PVC in the exposed areas surrounding the pad, on berms and on the spillway.
- d. Secondary clay liner consisting of a 12 inch  $1.0 \times 10^{-7}$  centimeter per second clay layer. The clay may be laid in a single 12 inch lift due to the numerous handling steps and blending procedures to adjust the moisture content of the clay.
- e. Leak detection media consisting of a geofabric overlying a 4 inch layer of  $1 \times 10^{-3}$  centimeter per second material containing less than 5 per cent minus 200 mesh material.
- f. Leak detection base consisting of 1 inch perforated pipe spaced 20 feet on center laid on 6 inches minimum of  $1.0 \times 10^{-6}$  centimeter per second or less material. The material shall be free from pockets of sand or gravel.

The peizometers required to monitor the process fluid head on the geomembrane will be deleted from this extension due to the 3 feet of  $1 \times 10^{-6}$  centimeters per second materials which protects the geomembrane.



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Construction of the heap leach pad authorized by this permit must be under substantial continuous construction within one (1) year of the date of this permit.

We are advising you that any increase in pH, lead, cadmium, cyanide or constituents with ground water quality standards or surface water above background level due to this project may cause the project to be listed on the national priority list of hazardous substance sites by EPA pursuant to the Comprehensive Environmental Response Compensation Liability Act (CERCLA).


All wastes not exempt under the mining exemption will need to be managed in accordance with Utah's Hazardous Waste Management Regulations (i.e. spent solvents, off specification acids and chemicals, and undesirable metals in the leach solutions, etc.)

By copy of this letter we are requesting the Division of Oil, Gas and Mining inspect the leak detection sumps of this facility during any site visits.

Please call Mr. Mack Croft or Mr. Charlie Dietz of our staff at 538-6146 if there are any questions.

Sincerely,

Water Pollution Control Committee



Don A. Ostler, P.E.  
Executive Secretary

CGD:pb

cc: Mr. Roger Foisy, State Health Department, Richfield  
Mr. Wayne Hedburg, Oil, Gas and Mining  
Mr. Bruce Hall, Central Utah District Health Dept.

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